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YOUNG ADOLESCENT EFL LEARNERS' PERSPECTIVES ON CRITICAL THINKING SKILLS

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Abstract

Critical Thinking Skills (CTs) are among the 21st century learning skills, and schools are expected to equip the students with these skills. Turkey has been restructuring the educational system in order to improve the quality of education which enables students to acquire such learning skills as critical and creative thinking, problem solving, and collaboration. The present study based on the perspectives of young adolescent EFL learners presents findings on the students' awareness of CTs, and whether or not they apply them to a given task, and if there is any conflict between knowledge and application of CTs. The findings showed that the students, despite their quiet well awareness, did not effectively apply CTs. The problems they encountered were assumed to be resulted from lacking in metacognitive knowledge.

Keywords: Critical Thinking Skills, Declarative and Procedural Knowledge

1. Introduction

Preparing students for the abilities and traits which will help them in their future life is the priorities of 21st century skills. The requirements of 21st century forced schools to weave twenty first century learning skills into content area content area teaching so that students can participate in global world. Carneiro (2007) claims that students should be equipped with these skills to "connect knowledge and skills, learning and competence, inert and active learning, codified and tacit knowledge, and creative and adaptive learning and transform them into valuable skills'(p. 156).

As a result of this force schools have been transforming their curriculum into a new form which enables students to acquire such learning skills as critical and creative thinking, problem solving, and collaboration (Carroll, 2007; Fisher & Frey 2008; Trilling & Fedel, 2009; Piirto, 2011). The need to keep up with this transformation has been felt in Turkey as well. Turkey has been restructuring the educational system in order to improve the quality which fulfil the needs of the country and comply with the decisions, developments and practices in international context, in particular, in European Union (EU). Basic skill competencies and knowledge expectations of the past have been replaced by "critical and creative thinking, problem solving creativity and innovation; critical thinking and problem solving; communication; and collaboration.

In the Turkish curriculum, the followings are designated as basic skills in the Turkish primary and secondary curricula: (Ananiadou & Claro 2009) "Critical thinking, Creative thinking, Communication, Problem solving, Decision making." Critical and creative thinking, problem solving and decision making are implicitly given across curricular areas, but they are not formally assessed. There is no in service and pre-service teacher training programmes the objectives of which are these skills and competencies. There are few studies on critical thinking in relation to second/foreign language learning (SL/FL). Critical thinking can best be

developed in SL/FL because the students are facing a different culture, a new way of thinking and living.

Critical thinking should be an important goal of education and students cannot learn well if they do not think well. It has been recognized as one of the main goals in education since it might pave the way to improve the quality of learning (Ennis, 1992: Moore, 2004; Paul, 2004; Arend, 2009). There are many definition of critical thinking, yet educators agree that in language learning critical thinking involves "rational judgment, logical reasoning, analyses, and evaluation of arguments, inference, and deduction" (Floyd, 2011, p. 9). The definition proposed by Halpern can best associate with the aim of the study:

> Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is purposeful, reasoned, and goal directed—the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions, when the thinker is using skills that are thoughtful and effective for the particular context and type of thinking task (Helpern, 2013 p. 8)

1. Critical thinking skills and Metacognition

Researchers have reported that making use of cognitive skills and strategies is vital for critical thinking (Black 2005; Halpern 1998; Kuhn and Dean 2004). Cognitive skills can best be managed with metacognition which is thinking about how to perform those skills. The relation between metacognition and critical thinking has intrigued many researchers. Halpern (1998) suggests that metacognition enables individual to use the existing knowledge to manage and develop thinking skills. Metacognition is also considered to be the processes (1) involving knowledge of cognition (2) monitoring, control, and regulation of cognition (Flavell, 1979; Bransford & Schwartz, 1999; Pintrich, Wolters, & Baxter, 2000). These processes have been highlighted with the concepts of declarative, procedural and conditional knowledge by a few researchers (Kuhn, 2000; Schraw et al., 2006; Kuhn & Dean 2004)

According to Schraw (1998) "declarative knowledge refers to knowing "about" things. Procedural knowledge refers to knowing "how" to do things. Conditional knowledge refers to knowing the "why" and "when" aspects of (p. 114). Declarative knowledge in this study is accepted as the personal knowledge about oneself as a learner, such as one's strengths and weaknesses, as well as one's knowledge of strategies. Procedural knowledge refers to awareness and management of cognition, including knowledge about strategies. Conditional knowledge involves knowing when and why to use declarative and procedural knowledge.

Turkish education system is criticised since it is examination-oriented and students are expected to gain factual knowledge rather than procedural knowledge (Aksit & Sands, 2006). Examination based systems might enable students to organize the knowledge hierarchically not according to condition- action rules requiring procedural knowledge. For example, if the students store the knowledge of "simple present tense" as S+V+O and learn the other tenses in the same way, this becomes declarative knowledge. If they consciously use "if-then" rules and speculate that if sentence structure is S+V+O in English then all other tenses must have same properties, yet there should be some alteration.

Developing critical and creative thinking among the other skills is one of the aims of the education mentioned in the Turkish curriculum. Thus, equipping students with procedural knowledge is important for problem-solving and critical-thinking skills. Having students use procedural knowledge encourages the use of higher-level cognition, which essential for critical

thinking. However, there are no assessment policies or teacher training programmes specifically targeted to these skills and competencies.

2. Methodology

Using a survey research methodology, researcher of the study utilized an instrument in order to gather valid and reliable findings. This study begins by examining the importance of critical thinking in education. Next, students' perspectives were collected by a questionnaire based on the 35 critical thinking strategies and four reading comprehension questions. According to Paul et al (1990), to learn to think critically is a combination of both affective and cognitive skills. In the last part of the study, the students were presented four reading tasks in which they would be able to make informed judgments by interpreting information analysing the situation and resolving problems.

2.1. Aim of the study

The aim of this study was to investigate the Young Adolescents EFL learners' perspectives on critical thinking skills. The following research questions were formulated to achieve this aim.

1. Are Young Adolescent EFL Learners aware of critical thinking skills?
2. Is there any conflict between awareness and application of CTs?

2.2. Participants

The target population of this study was the 7th grade state secondary school students located in different part of Turkey. Totally 387 students whose ages ranged between 12-13 years participated in the study. This group was chosen based on the assumption that this age group start to explore diverse ways of thinking.

2.3. Instruments

A questionnaire and four reading comprehension tasks were used as data collection tools.

2.3.1. Questionnaire

Data regarding students' awareness of critical thinking strategies were collected with a four point Likert scale consisting of 45 items and adapted from different data collection tools based on the 35 Critical Thinking Strategies suggested by Paul, (1990). The questionnaire aimed to measure the students' attitudes and beliefs by asking the frequency "Always, Usually, Sometimes, Never." It aimed to find out the preferences of the participants on Affective Strategies, Cognitive Strategies – Macro Abilities; Cognitive Strategies – Micro Abilities. The value of Cronbach Alpha using SPSS 21.0 was calculated to be 0.785 which shows that the instrument used was reliable.

2.3.2. Reading comprehension tasks

Four reading texts that placed students in realistic situations, where they were expected to reach a decision to select the best alternative were given to the students. They aimed to have students take the advantage of different cognitive processes such as inference, application, analysis and assumptions all of which involve applying the principles of logic and thereby show involvement in the CT process (Helpern 2006).

2. 4. Data Collection and Analysis

We believed that the responses of the participants would not be distorted in anyway due to their deficiencies in English. Thus, the original version of the items was translated into the native language by the researcher and a lecturer from the Turkish Language Department. The vague, incorrect or inappropriate points were discussed until agreement was obtained.

The Turkish version of the instruments was administered by the class teachers, and students were asked to raise questions about the item(s) they had trouble understanding students were. Most of the students took not more than a class hour (40 minutes) to complete the questionnaire and respond to the tasks. Percentage statistics were computed using SPSS version 21.0 to provide information concerning the distribution of responses.

2. 5. Results

2.5.1. Awareness of CT skills

The items in the questionnaire are categorized into three main groups according to the guidelines suggested by Paul (1993): Affective, Cognitive Macro and Cognitive Micro Strategies.

Table 1. *Affective Strategies*

	Alwy. %	**Usu. %**	**Some. %**	**Nev. %**
1. I don't just believe what everyone else does or says.	10,1	22,0	52,7	15,2
2. I am patient enough. Even my homework is hard; I stick to it and finish it.	40,8	31,3	23,8	4,1
3. I don't afraid of making mistakes when answering to a question.	26,1	32,0	32,0	9,8
4. I enjoy finding answers to challenging questions.	37,0	25,3	26,4	11,4
5. I don't become offended or confused when I am questioned.	20,9	37,0	34,9	7,2
6. I try to be the kind of person I expect others to be.	40,3	35,1	15,0	9,6
7. I don't let my emotions direct me when I decide on something.	21,2	28,4	32,3	18,1
8. I can solve problems that I experience in an orderly, organized way.	35,9	38,0	22,2	3,9
9. I keep my mind open to new reasons and evidence, so I will be more easily to correct my prejudiced thought.	35,1	37,7	24,0	3,1
10. Whenever I disagree with people, I try to see things the way they do.	34,1	33,3	25,6	7,0
11. Sticking to a problem is always better than giving up.	46,0	34,1	13,2	6,7
12. I am able to question the reasons behind the rules, activities and procedures	20,4	41,9	32,3	5,4
13. I admit that I am not % 100 rights all the time.	34,1	29,2	23,5	13,2
14. I respect my friends. I am willing to hear their points of view.	51,7	32,3	12,9	3,1
15. I listen carefully what my friends say.	53,5	26,9	17,3	2,3

Affective and cognitive strategies are complementary to each other. According to Paul (1992) affective strategies are associated with the traits of mind, predisposition to critical thinking since they enable learners to be motivated to think critically. Paul (1992) suggests that there are seven interdependent intellectual traits of mind that need to be developed to become a true critical thinker: intellectual humility, intellectual courage, intellectual empathy, intellectual integrity, intellectual perseverance, faith in reason and an intellectual sense of justice.

Based on the finding obtained from the questionnaire, it is noted that almost all of the participants show their positive preferences towards these traits (Table 1). The results are quite encouraging: the majority of the participants agreed that they "always or usually "prefer to use affective critical thinking strategies. However, in the first and seventh items, a substantial number of them strongly agreed that they believe "what everyone else does or says" and "they let their emotions direct them when they decide on something."

Table 2. *Cognitive Strategies – Macro Abilities*

	Alwy. %	**Usu. %**	**Some. %**	**Nev. %**
1. I look up what I don't understand and question what I read until I understand.	17,6	36,7	42,6	3,1
2. I am able to use what I learned in one situation when I meet new situations that need the same skills.	40,1	40,8	17,1	2,1
3. I am able to see which information comes from an honest and trustworthy source and which information could be wrong or misleading.	21,4	36,7	34,6	7,2
4. I ask questions about a topic or subject to learn it deeply.	35,9	31,8	30,0	2,3
5. I can raise appropriate questions to understand and evaluate a situation.	27,1	32,3	32,8	7,8
6. I use everything available to find the best solution.	49,9	33,1	15,2	1,8
7. I am good at getting the main point of a passage or text.	25,6	34,4	30,0	10,1
8. I am able to form a new sentence using the opposite or synonym of a word.	55,0	24,8	17,6	2,6
9. I am able to simplify information to make things more clear and understandable.	30,7	40,1	24,5	4,7
10. I can evaluate both my goals and how to achieve them.	48,1	28,9	19,4	3,6
11. I can categorize and group topics.	27,6	40,8	26,6	4,9
12. After learning new English vocabularies from a reading text, I am able to apply it to other contents.	41,3	25,8	27,9	4,9
13. I ask "why" questions to go beyond the basic information.	38,8	41,1	17,1	3,1
14. There is often a number of ways to solve a problem or reach a goal.	57,4	28,2	13,2	1,3
15. To understand only the definitions is not enough for me. I am also able to supply clear, obvious examples.	32,6	40,3	22,7	4,4
16. I simplify the problems, so I make them easier to deal with.	35,9	38,8	22,5	2,8
17. Questioning is an effective way to get the necessary information.	55,6	27,1	15,8	1,6

18. I ask questions about a topic or subject to learn it deeply.	36,4	35,1	25,6	2,8

According to Bloom (1956) the cognitive domain of learning is associated with the knowledge and the development of intellectual skills. The macro-strategies are usually connected with a cognitive taxonomy consisting of lower level which is the recall or recognition of specific facts and higher order thinking which include critical and creative thinking as well as problem solving, decision making, and information processing. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. These are the larger areas of critical thinking skills; more specialized skills are in the last section below. As seen in the table that there the participants stated that they were always and usually using these strategies

The responses displayed in Table 2 indicate that the majority of the students agree that they are aware of cognitive macro strategies, although there seems to be a contradiction between items one and 17. A total of 54,3 % of the students, if always and usually responses are considered together, do not consider asking question for clarification whereas the majority (a total of 82,7%) favour questioning to get necessary information.

Table 3. *Cognitive Strategies – Micro Abilities*

	Alwy. %	**Usu. %**	**Some. %**	**Nev. %**
1. I approach problems realistically.	42,9	32,8	19,1	5,2
2. I can distinguish what I know from what I don't know.	58,7	27,1	11,6	2,6
3. I am able to recognize the gaps between facts and ideals.	31,8	40,8	23,0	4,4
4. I can find the similarities between two or more things.	38,8	37,2	22,2	1,8
5. I can find the differences between two or more things	42,1	37,5	19,4	1,0
6. I am able to compare two or more things to each other.	39,8	38,5	17,8	3,9
7. I can support my answers with reasons and evidence.	36,2	38,8	22,2	2,8
8. I can make inferences about a story, from story titles and pictures.	50,1	31,3	15,8	2,8
9. I create possible solutions in order to find the best one.	37,2	39,3	21,2	2,3
10. I try to choose the most relevant vocabulary to explore my thoughts.	34,6	41,9	21,7	1,8
11. I have realistic ideals and study hard to achieve them.	49,6	33,9	14,0	2,6

According to Beyer (1987) micro thinking strategies are detecting bias, identifying logical fallacies and inconsistencies in reasoning, distinguishing relevant from irrelevant information. Table 3 shows that the overwhelming majority of the students are in the tendency of using cognitive micro strategies, although almost 50 % of them claimed to be always using items 2, 8 and 11.

2.5.2. The application of critical thinking skills

The aim of using short reading text was based on the idea that students must have critical thinking skills, problem solving and decision making skills required as 21 century learning skills. In order to use these skills, the students were expected to elaborate and organize information in meaningful ways which require the usage of procedural knowledge.

Table 4. *Comprehension questions for the application of CT skills*

Questions	CT Skills	%
1. Which of the following, if true, would most weaken the above argument?	Interpretation, inference, logical reasoning	12,4
2. What is the minimum range in which the true temperature lies?	Analysis, application, problem solving	15,5
3. Which one of the following best illustrates the principle underlying the argument above?	"interpretation, application, analysis, synthesis, argumentation	23,3
4. Which one of the following conclusions is best supported by the text above?	problem-solving, inference and logical reasoning	24,0

The students were also required to exercise CT skills such as "interpretation, application, analysis, synthesis, argumentation, evaluation, problem-solving, inference and logical reasoning" and find the best one from a set of four alternatives. The responses to the reading tasks were used in the underlying assumptions of why there is a conflict between knowledge and application of CT skills. As seen in Table 4 that the majority of the students exhibited problems with the questions since the percentages of the responses for the best alternative are far less than 50, 0 %. They even had more problems in the first and second questions requiring mostly logical reasoning and problem solving (12, 4 % and 15, 5 % respectively).

3. Conclusions and Discussions

The results of the present study provide valuable information on the nature of critical thinking ability of the students in language classrooms and shed lights on research questions. First, an overwhelming number of students were aware of many of the CT skills although they did not exhibit them during the learning processes.

The results secondly revealed that Turkish young adolescents EFL Learners have sufficient knowledge of critical thinking strategies. However, they have insufficient capacity to knowledge transfer. Most of them have low level of critical thinking, problem solving reflection and anticipation. We assume that students may have developed a variety of CTs without being aware of them. Helpern (1998) states that critical thinking skills are goal and task oriented, and they are not applied in a mechanical or routine, they require conscious judgement, analysis and synthesis.

The results lastly indicated a conflict between students' critical thinking awareness and application of the critical thinking skills. This is assumed to have resulted from the metacognitive knowledge. Bedir (1998) reported that the Turkish students were in the tendency of looking for every unfamiliar word up, and translating sentences word-by-word to figure out the meaning of any text. By doing so, they often refer to using factual knowledge or the information they know, which do require the cognitive process. They often "make little sense of what they have been reading, or they choose to ignore meaning-making completely and give up in frustration" (Booth & Swartz, 2004, p. 22). However, critical thinking is a complex construct, and it is a form of metacognition which include declarative knowledge, procedural knowledge and epistemological knowledge (Kuhn, 1999). Lacking in metacognitive knowledge which enables students to be aware of their own thinking process students may have inconsistently applied CTs or they had knowledge transfer. Researchers stated that critical thinking requires knowledge transfer; otherwise it may not be critical thinking (Bransford & Schwartz, 1999; Cobb & Bowers, 1999; Dewey, 1910/1997; Kuhn, 1999).

The implication of the study is that schools do not explicitly encourage the application of critical thinking skills although they are mentioned in the curriculum. Bedir (2011) believes that Turkish Education system, though renovations in curriculum, have prevented students from the use of procedural knowledge since it is an examination-oriented system, dependent on memorizing facts and not on applying concepts. The students from primary to high school and from high to university have to take a few high stake exams which determine their future. In in many cases and particularly in high stakes testing, the content and activities are to a large part adapted and geared in the direction of the exams leading to negative washback. Teachers focus more on the (grammar, reading, and vocabulary) which is tested in the exam and ignore the content based teaching though they have sufficient knowledge of language teaching approaches and methods.

The exam oriented education systems also prevent students from skill development since students are expected to learn everything by heart in order to get good grades. Paul (1992) names this as lower order learning which force students to memorize material without understanding the logic. However, the ultimate goal of education should be to have students use critical thinking strategies which are essential in twenty first century. Choy and Cheah (2009) emphasizes that "although students have a natural ability to think critically, it is important for teachers to guide them in order to refine their skills" (p. 198). Additionally, assessing CTs is difficult, so different tools should be used to collect more reliable data (Swartz & McGuinness 2104).

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